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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,199	07/30/2003	Juergen Wulf	GK-OEH-163 / 500814.20065	2020
7590	07/13/2005		EXAMINER LEVKOVICH, NATALIA A	
Gerald H. Kiel, Esq. REED SMITH LLP 599 Lexington Avenue New York, NY 10022-7650			ART UNIT 1743	PAPER NUMBER

DATE MAILED: 07/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/630,199	WULF, JUERGEN	
	<b>Examiner</b>	<b>Art Unit</b>	
	Natalia Levkovich	1743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 July 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☒ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                                    |

TS

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 22 is rejected under 35 U.S.C. 112, second paragraph, as being unclear for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 22 recites: "the unit fitting exactly into the holder of the dispensing comb and which is used to perform alignment between light spots and mechanical position of MP 2 by observing the light spots with the camera and stepping the MP 2 in x/y direction." The 'MP 2' expression lacks antecedent basis in the claim and, therefore, is unclear.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-5, 8-13 and 19-20 are rejected under 35 U.S.C. 102(e) as anticipated by Giebeler et al. (US 20020176801).

Giebeler discloses an integrated fluid delivery and analysis system comprising a housing with a door, a dispense system, a light source, a detector, and optics “adapted to direct light from the light source to a sample holder such as a microplate positioned in an examination site, and from the sample holder to the detector... The exchange positions of the fluidics module and the examination site of the analysis module may be separated by an integral openable/closable door that reduces or eliminates airflow and light leaks”(See [0030], [0033]). “FIG. 5 shows a perspective view of an exemplary material exchange system [‘table system’ – Examiner] 552, which may include one or more carriages 554 for supporting one or more material holders 556 and one or more carriage drivers 558 for moving the carriages among different positions...”- [0069]. The dispense system comprises “a compact modular folded pipettor head [‘dispensing comb’having a symmetric structure – Examiner]-(See [0046]; Figures 6-7).

“The pipettor may include a linear array of 8, 16, or any other number of appropriately spaced pipettor elements to correspond to a single row of a 96-well, 384-well, or any other number of well microplate, respectively. The pipettor also may include a linear array of 12 or 24 appropriately spaced pipettor elements to correspond to a single column of a 96-well or 384-well microplate, respectively. The pipettor also may include a number and arrangement of

pipettor elements to correspond to a portion of a row or column, or two or more rows or columns, or another type of sample holder. The dispense assemblies may be easily interchangeable on the dispense assembly driver to accommodate microplates and other sample holders with different numbers and/or densities of wells”-[0060].

The arrangement may also include “a suitable CCD (rectangular or square, cooled to a satiable temperature to insure adequate signal to background ratio) “-[0247]. “The analyzer module preferably includes top and bottom optics, enabling a variety measurement modes, including: (1) top illumination and top detection, or (2) top illumination and bottom detection, or (3) bottom illumination and top detection, or (4) bottom illumination and bottom detection...

Generally, top optics may be used with any sample holder having an open top, whereas bottom optics may be used only with sample holders having optically transparent bottoms, such as glass or thin plastic bottoms...”-{0087}. As to ‘to a controllable pump for metering the amount of liquid to be dispensed without immersion in wells of the microplate’, Giebeler teaches in [0049] plus, that ‘the dispense assembly may use noncontact and/or contact dispense mechanisms’, and, although the pumps are not disclosed explicitly, the automatic operation of the apparatus of Giebeler would not be possible without such pumps being incorporated into the system.

With respect to claim 3, Giebeler teaches that ‘the dispense assembly and sample holders may have “realignment mechanisms” which would “allow, for example, the dispense assembly to be offset along an axis defined by a linear array of dispense elements, so that an eight-channel dispense assembly for a 96-well microplate may be used to dispense into a 384-well microplate by combining a first dispense into a first set of eight wells, an offset, and a second dispense into the second set of eight wells”-(See [0065]).

As to claim 4, as discussed above, “the pipettor also may include a number and arrangement of pipettor elements to correspond to ... **two or more rows** or columns, or another type of sample holder” which reads on ‘dispensing combs which are arranged parallel to one another, rigidly coupled with one another’.

Referring to claims 5 and 8, Giebeler teaches “a variety of dispense and/or analysis strategies, independently or in conjunction with one another’, for example, the dispense may be “of the same reagent from a reservoir with the same format as a microplate, to all wells in the sample holder, or even multiple reagents at different times” –[0127].

In regards to claim 19, Figure 11 shows a sample-plate holding fixture (or carriage) 1101 designed to accommodate multiwell plates of standard dimensions (e.g., 86 by 129 millimeters). To accommodate other sized plates, an adaptor plate (not shown) is mounted within fixture 1101, the non-standard plate fitting within the adaptor plate”- [0098].

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Giebeler et al. (US 20020176801) in view of Marouiss et al. (US 20010048899).

Giebeler does not explicitly teach controllable valves for dispensing units, however such valves are widely used in the art (See, for example, the Marouiss reference, [0163], [0171], [0176]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed controllable valves with the dispensing units in the apparatus of Giebeler, in order to monitor the fluid flow.

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Giebeler et al. (US 20020176801) in view of Schick (US 20030230521).

Giebeler does not teach a waste trough, however, waste containers are routinely used in liquid handling systems (see, for example, the Schick reference, [0044]-[0045]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed waste containers arranged in a suitable manner, in the apparatus of Giebeler, in order to provide proper flow of the materials.

9. Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Giebeler et al. (US 20020176801) in view of Sekiya et al. (US 5,828,498) and further in view of Gerdt (US 6,731,845).

Giebeler does teach a cooled CCD (see above), however, the reference does not teach a fast objective, reducing relay optics and light intensifier. Sekiya discloses a fast objective employed

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in the conditions of reduced quantity of illuminating light (Col.1, line25). Gerdt teaches an optical system incorporating CCD, image intensifier and reducing relay optics (Col.4, lines 50-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed the above optical elements, in the apparatus of Giebeler, in order to improve the resolution of the system and to obtain the high quality of the entire image.

10. Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Giebeler et al. (US 20020176801) in view of Sekiya et al. (US 5,828,498), in view of Gerdt (US 6,731,845) and further in view of Phillips et al. (US 6584052).

Giebeler modified by Sekiya and Gerdt does not specify the fast objective to be a telecentric objective with a high numerical aperture. Phillips discloses a fast objective lense having a high numerical aperture which allows to achieves a small spot size (Col.2, line 10). The telecentric optics design allows to minimize the light loss due to the source tilt (Col. 6, lines 50-55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed a telecentric objective with a high numerical aperture, in the apparatus of Giebeler, in order to enhance the quality of the images.

As to claim 18, although Giebeler modified by Sekiya, Gerdt and Phillips do not specify particular orientation of the CCD camera relatively to the microplate, as well as the microplate being devided into segments. Nevertheless, segmented microplates are well known in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed a segmented microplate and optimal orientation of the camera (depending on the particulars of the system layout) , in the apparatus of Giebeler, in order to properly accommodate the image.



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11. Claims 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Giebeler et al. (US 20020176801) in view of Wohlstadter et al (20040022677).

Giebeler does not teach means of autofocusing and alignment. Wohlstadter discloses optics that “collects an image and and focuses that image’ automatically (See [0520]) and “mechanisms to align and orient the assay plates with the photodetector(s) “ (See [0016]). As to light emitting diodes, focusing lenses, batteries and power switches, these elements are routinely used in the art. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed means of alignment and auto-focusing , in the apparatus of Giebeler, in order to provide automatic control of high quality imaging system.

### *Conclusion*

12. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure: Gunz. (US 6,558,623).


13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Natalia Levkovich whose telephone number is 571-272-2462.

The examiner can normally be reached on Mon-Fri, 8 a.m.-4p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
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